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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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03/25/2004

Hidehiro Ogawa

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EXAMINER

WANG, KENT F

ART UNIT

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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/808,524	Applicant(s) OGAWA ET AL.	
	Examiner KENT WANG	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments, filed on 03/25/2008, have been entered and made of record. Claims 8-16 have been cancelled. Claims 1-7 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the interpretation of the original cited references.

The applicant argues that Higuchi fails to disclose or suggest a power system in which a work volume value indicating a volume of work that the apparatus main body has been engaged in is transmitted from the apparatus main body to the battery unit over a predetermined cycle, as recited by independent claim 1. Applicant further disagreed with the Office Action's allegation that the residual battery capacity of Higuchi corresponds to the claimed work volume value. The examiner understands the applicant's arguments but respectfully disagrees with the applicant's assessment. Although the use quantity representing the extent to which the battery has been consumed from the fully charged state to the present state relative to the full charged capacity, i.e., the ratio of battery use and the work volume (the operation volume) with which the camera has been engaged in operation from the fully charged state to the present state are indicated. However, the applicant's specification explicitly teaches the work volume is the operation volume. Paragraph [0076] states "it is possible to judge with ease and accuracy how much more use the user can expect

out of the camera at the present rate of use, i.e., how many more frames of images can be photographed and how much longer the camera can be used. Namely, the user can ascertain with ease and accuracy the **available work (operation) volume** and work (operation) time **remaining in an apparatus** operating on a secondary battery.” Examiner further believes the phase “volume of work that the apparatus main body has been engaged” as claimed in claim 1 is reference to “consumed battery capacity” as in the applicant’s specification (see paragraph [0077]-[0079], Ogawa). Therefore, examiner believes his office action of 09/09/2007 is proper and accurate. Applicant’s arguments of claim 1 are not convincing.

The applicant also argues that Higuchi is silent regarding a cumulative work volume value as the residual battery capacity of Higuchi is not corresponds to the claimed work volume value as in claims 2-7. The examiner understands the applicant’s arguments but respectfully disagrees with the applicant’s assessment. However, examiner believed that the applicant’s specification explicitly teaches the work volume is the operation volume, paragraph [0076] states “it is possible to judge with ease and accuracy how much more use the user can expect out of the camera at the present rate of use, i.e., how many more frames of images can be photographed and how much longer the camera can be used. Namely, the user can ascertain with ease and accuracy the **available work (operation) volume** and work (operation) time **remaining in an apparatus** operating on a secondary battery.” Examiner believes the phase “cumulative work volume” as in claims 2-7 is reference to “camera use status cumulative values” as stated in the applicant’s specification (see paragraph [0077]-[0079], Ogawa). Therefore, examiner believes his office action of 09/09/2007 is proper and accurate. Applicant’s arguments of claims 2-7 are not convincing.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-5 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Higuchi, US 2001/0008424.

Regarding claim 1, Higuchi discloses a power system comprising:

- a battery unit (a battery pack 1, Fig 1) that includes a battery (a battery cell 20, Fig 1) ([0030]); and
- an apparatus main body (a video camera 60, Fig 1) that operates on power supplied from the battery (a battery cell 20) in the battery unit (a battery pack 1) mounted thereat, the battery unit (a battery pack 1) and the apparatus main body (a video camera 60) being engaged in information exchange (communication circuits 65 and 72, Fig 1) ([0029], [0030]), wherein:
 - a work volume value (residual battery capacity) indicating a volume of work that the apparatus main body (a video camera 60) has been engaged in is transmitted from the apparatus main body (a video camera 60) to the battery unit (a battery pack 1) over a predetermined cycle (charging/discharging cycles of the battery cell) ([0029] and [0071]);
 - the battery unit (a battery pack 1) calculates a cumulative work volume value of the work volume value (calculates the current residual battery capacity) at the apparatus main body (a video camera 60) and stores the cumulative work volume value (current residual battery capacity stores in non-volatile memory 17, Fig 7)

therein, and the battery unit (a battery pack 1) also detects a consumed battery capacity value indicating an extent to which a battery power has been consumed (battery cell voltage detection information) at the apparatus main body (a video camera 60) ([0029]-[0030] and [0071]);

- the cumulative work volume value (residual battery capacity) , the consumed battery capacity value (calculates the current residual battery capacity) and a charged battery capacity value (charging/discharging current detection information) are transmitted (sent via the communication circuit 72) from the battery unit (a battery pack 1) to the apparatus main body (a video camera 60) over the predetermined cycle (charging/discharging cycles of the battery cell) ([0029]-[0030]); and
- the apparatus main body (a video camera 60) displays a battery use rate indicating an extent to which the battery has been used based upon the consumed battery capacity value (current residual battery capacity) and the charged battery capacity value (charging/discharging current detection information), and also displays the cumulative work volume value (current residual battery capacity) at the apparatus main body (a video camera 60) ([0029]).

Regarding claim 2, Higuchi discloses a power system wherein:

- different operating modes (mode input device 69, Fig 1) of the apparatus main body (a video camera 60) are classified in correspondence to varying levels of power consumption(level of the charging current) ([0066]-[0067], and [0088]);

- work volume values (residual battery capacity) each corresponding to one of the operating modes (normal operational mode or power saving mode) are transmitted (sent via the communication circuit) from the apparatus main body (a video camera 60) to the battery unit (a battery pack 1) ([0030]);
- the battery unit (a battery pack 1) calculates and stores (calculates the current residual battery capacity, [0029]; current residual battery capacity stores in non-volatile memory, [0071]) therein cumulative work volume values corresponding to the individual operating modes (normal operational mode or power saving mode) of the apparatus main body (a video camera 60) and transmits (sent via the communication circuit) the cumulative work volume values corresponding to the individual operating modes to the apparatus main body (a video camera 60) ([0029] and [0071]); and
- the apparatus main body (display device 64,) displays the battery use rate (residual battery time) and the cumulative work volume values (residual battery capacity) corresponding to the individual operating modes (normal operational mode or power saving mode) of the apparatus main body (a video camera 60) (Fig 11 and [0078]-[0080]).

Regarding claim 3, Higuchi discloses a power system wherein:

- the battery unit (a battery pack 1) allows the battery (a battery cell 20) to be charged with a charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0030]);

- the battery unit (a battery pack 1) and the charge apparatus (charging/discharging current detection circuit 80, Fig 1) exchange information with each other (information generating circuit 71, Fig 1; [0030]); and
- the cumulative work volume value (residual battery capacity) stored in the battery unit (a battery pack 1) is reset to 0 (minimum usable voltage is fixed) when the battery has been charged by the charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0037]-[0040], and Fig 3).

Regarding claim 4, this claim recites same limitations as claim 3. Thus it is analyzed and rejected as previously discussed with respect to claim 3 above.

Regarding claim 5, Higuchi discloses a power system wherein:

- the battery unit (a battery pack 1) allows the battery (a battery cell 20) to be charged with a charge apparatus (charging/discharging current detection circuit 80, Fig 1) ([0030]);
- the battery unit (a battery pack 1) and the charge apparatus (charging/discharging current detection circuit 80, Fig 1) exchange information with each other (information generating circuit 71, Fig 1; [0030]); and
- the battery unit (a battery pack 1) detects the charged battery capacity value (charging/discharging current detection information) and transmits the detected charged battery capacity value to the charge apparatus (charging/discharging current detection circuit 80) ([0030]-[0033]);
- the charge apparatus (charging/discharging current detection circuit 80) makes a decision based upon the charged capacity value (charging/discharging current

- detection information) transmitted from the battery unit (a battery pack 1) as to whether or not (intuitive visual indication of the ratio in percentage of the current residual battery time) the battery is in a fully charged state and ends a charge of the battery once the battery is judged to be in the fully charged state ([0035]); and
- the battery unit (a battery pack 1) resets the consumed battery capacity value (residual battery capacity) stored in memory (non-volatile memory 17, Fig 7) at the battery unit to 0 (minimum usable voltage is fixed) when the charge of the battery ends ([0037]-[0040], and Fig 3).

Regarding claim 7, Higuchi discloses the apparatus main body is a camera (a video camera 60); and the work volume value is a length of time over which the camera has been engaged in use (residual usable time of the video camera, in other words, the usable residual service life of the battery) ([0033]).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Higuchi in view of Niikawa, US 6,710,809.

Regarding claim 6, Higuchi discloses the apparatus main body is a camera. Higuchi does not disclose the work volume value is a number of frames of images photographed in the camera.

Niikawa discloses the work volume value is a number of frames of images photographed in the camera (displays an available photographing number, see col. 13, lines 61-67 and Figs 10-11, Niikawa).

Thus, it would have been obvious to one of ordinary skill in the art to have included the battery-driven electric equipment as taught by Niikawa into Higuchi's electronic apparatus, as to provide an electric equipment including a digital camera in which a battery can be effectively consumed while keeping the battery life as long as possible and capable of ascertaining with ease the remaining work volume and the remaining work time available in an apparatus which operates on battery power (see col. 2, lines 26-29, Niikawa).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Aranovich (US 6,363,146), Miki et al. (US 6,101,339) and Nishimura (US 2002/0171755).
8. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW
June 5, 2008

/Ngoc-Yen T. VU/

Supervisory Patent Examiner, Art Unit 2622